UNIVERSITY OF PENNSYLVANIA

EMPEDOCLES AND ANAXAGORAS IN ARISTOTLE'S DE ANIMA

GORDON HADDON CLARK

A THESIS

IN PHILOSOPHY

PRESENTED TO THE FACULTY OF THE GRADUATE SCHOOL IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF DOCTOR OF PHILOSOPHY

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PREFACE

Save us, we pray, from those who have so entombed themselves in the dark and damp of antiquity that they no longer appreciate the light of the present day; but save us all the more from those who go blithefully on their way in utter disregard of the lessons the past can teach. Why is it necessary to insist that the wise man should learn by the mistakes of others? Yet we do our forefathers great injustice if we think of them merely as makers of mistakes. Not only have they formulated an ideal for us and given us inspiration, they have as well, among their mistakes, laid the basis of our more exact science which shortsightedness alone would call emancipated from the past.

Much of the literature intended to explain ancient philosophy to modern minds deals only with antiquities as such. Professor Edgar A. Singer, Jr., however, who is not an historian of philosophies but a modern philosopher, by his proving all things and holding fast to that which is good, crystallized my own suspicions in showing how ancient thought could contribute to contemporary problems, instead of losing itself in merely philological labyrinths. To him I am greatly indebted for the appreciation of problems which are eternal. (The work of Professor Paul Shorey more specifically demonstrates the applicability of this general principle to the details of the texts.) Owing to the vast amount of scholarship required in such an undertaking, this thesis merely suggests one or two minor possibilities in this respect.

My grateful acknowledgments are also due to the late William Romaine Newbold, who, though he died before this study was begun, gave me a foundation of inestimable value during my first two years of study in Greek philosophy. He would sometimes criticize the literature for leaving untranslated those sections which by reason of their obscurity—I remember well how he spoke of certain works on Proclus—stood in need of interpretation in the form of translation. Translation is interpretation, and while in this study there is nothing as difficult as Proclus, the Greek text has been replaced by a translation; especially since anyone wishing to study the subject would in

any case have to consult the texts themselves. Where it was necessary to quote the *De Anima*, the translation of R. D. Hicks has been used uniformly. All other translations of the sources are my own unless otherwise indicated.

Finally I must express my appreciation of the kind help of Professor Isaac Husik. He has not only scrutinized my translations and criticized my work, but it was he who first introduced me to the *De Anima* by reading it through with us in a seminar course, during which he suggested the subject of this thesis. That his aid was given to some extent according to professorial routine detracts not one whit from his graciousness and scholarly assistance.

The purpose of the thesis became more clear as the work progressed. Its germ lies in the gradual realization that generalizations like those about to be quoted in the Introduction are too general and frequently misleading. The aim therefore was carefully to examine each of Aristotle's historical statements, trying to harmonize wherever possible and always giving the ancients rather than the moderns any benefit of doubt. The writers quoted in the Introduction either are giving a hasty impression for which no detailed evidence can be produced, or, they are not giving the evidence. At any rate, no one has published a study on this particular topic.

What would be necessary for the final verdict on Aristotle would be a series of such theses, treating each philosopher referred to in each of Aristotle's works. Only after such an induction could generalizations be made. But how easy it is to anticipate the generalizations without going through the induction is perhaps only too well illustrated in the following pages.

GORDON HADDON CLARK.

Philadelphia
March 7, 1929.

INTRODUCTION

We have set for ourselves an interesting problem when we wonder if Aristotle's history of philosophy is trustworthy and substantially correct. Naïvely one may ask, why should it not be? He was a man of superior acumen and had the sources at his disposal. But a study of his writings develops a doubt. The firm belief in the final truth of his own system led him to examine others through Aristotelian spectacles. How far is this permissible? How far does it vitiate his accounts? The most noticeable effect of this bias is his attitude toward Plato. Against him an uncompromising polemic is carried on through all his works. Two conclusions are equally untenable: that Aristotle merely points out the absurdities of an impractical dreamer, and that Aristotle is unfit to criticize philosophers. Some of the same suspicion attaches to his treatment of the earlier philosophers as well. Various views have been advanced to satisfy our curiosity.

One of these is stated by Walter Veazie in an article entitled, *Empedocles' Psychological Doctrine* (Archives of Philosophy, Columbia University Press.) In the Prefatory Note he criticizes the usual method of approach and outlines a new method. "We will thus be in a position," he says, "to show the irrelevancies of the setting in which Aristotle and his successors tried to record or ridicule the early naturalistic philosophy."

A. E. Taylor's introduction to *Aristotle on His Predecessors*, which has primarily to do with Book I of the *Metaphysics*, also expresses similar if not so skeptical opinions of Aristotle's attempt at expounding preceding philosophy. On p. 35 he states that "little can be objected against his treatment of the early Ionian Monists . . . except a tendency to employ . . . technical terms of his own system. . . . When allowance has been made for this habit we readily see that Aristotle's interpretation of these naïve monistic thinkers is in all essentials thoroughly historical. . . . We can hardly say as much for his treatment in the present work of Empedocles and Anaxagoras."

(Miss) Clara E. Millard, *On the Interpretation of Empedocles*, p. 37, while speaking of Aristotle's criticism of Empedocles and

Anaxagoras with reference to "motor causes," says, "There is a clearly recognizable and easily calculable bias in all of Aristotle's reasonings in such matters." And she censures subsequent writers for following Aristotle instead of correcting him. Further, on p. 79, with reference to psychology we read, "Aristotle . . . entangles himself in a confusing and misleading attempt . . ." etc. "It is quite the manner of Aristotle to draw this inference, but, so far as we know, it was not involved in Empedocles' own reflections."

Burnet is more generous in *Early Greek Philosophers*, first edition, p. 370, where he says it is easy to make allowance for Aristotle's bias, and in the second edition, p. 270, speaking of the four periods of the world, he states, "Aristotle was specially interested in Empedocles and was not likely to misrepresent him on such a point."

The present study will examine the *De Anima*, in which also Aristotle is specially interested in Empedocles, and will attempt to show how Aristotle uses his predecessors in psychological theory. It may be that Aristotle is more just to Empedocles and Anaxagoras here than he was, according to Taylor, in the *Metaphysics*.

Empedocles is chosen as the major subject of this thesis, partly because he has never been treated in this manner, but more especially because his is one of the earliest, if not the very first attempt systematically to base a psychology on an underlying philosophy. Though it is impossible to determine his dates exactly, it is fairly certain that he died before Plato was born. His activity therefore, falls a full century before that of Aristotle. And yet, in the field of psychology, Aristotle discusses none at greater length. The reason is obvious. Empedocles makes a serious attempt to explain everything consistently, including psychic phenomena, on the basis of the fewest and most simple principles. We want to know, therefore, if Aristotle was reasonably trustworthy in his account of Empedocles, and if his criticisms are just.

Yet there are difficulties in an undertaking of this nature so serious that some have thought it useless to try. They claim that it is well nigh impossible to determine what Empedocles himself thought, and hence that there is not the least hope of

determining whether Aristotle is trustworthy or not. He wrote with a bias, and so did all the other so-called "sources"; to play one off against another reduces itself to a game of chess. (Yet even a game of chess can be won by careful playing.) Then there are difficulties of textual and philological criticism. Over a period of hundreds of years, from Empedocles to Sextus Empiricus, for example, words change greatly in meaning. Again, quotations are hard to understand. We must always take the purpose of the writer into consideration and study the context into which he fits his quotation. But there is not merely one context, there are two, first, the context of the man who is quoting, and secondly, the original context from which the quotation is taken. Now if the quoter ignored the original context and we ignore the present context our result can be valuable only by a happy cancellation of blunders.

And even granted freedom from error from all these sources, i. e. let all the fragments be of equal worth, free from bias, even so we only have fragments. Do you think that if you picked at random a hundred quotations from Kant which by the mere chance of fate had survived a thousand years, quotations taken from Hegel, Bergson, James, Fichte, McCosh, do you think you could piece together Kant's philosophy? Would space-time coordination suggest his theology? Would the Schematismus lead you to his Ethics? And if, in such a case, Hume were in like obscurity, could you see the motives for his doctrine of causality?

Now this is too skeptical. Fragments are not preserved by mere chance. They are quoted because they represent the kernel of the doctrine; supposedly and usually they are selected with the greatest care. One of the contexts at least we always have, and this sometimes throws light on the original.

For example, I am satisfied that if one took the time he could collect a hundred quotations from Kant which would give a tolerably good account of his philosophy. We might begin with *Some Problems of Philosophy* by William James. On p. 51 there is a German quotation in the footnote which has an excellent context. On p. 84 there is a shorter quotation in English. Here we have reproduced the two-language difficulty and practically

all the conditions of our knowledge of the Pre-Socratics. To be perfectly fair, we can next turn to a less valuable attempt at philosophizing, *Realistic Philosophy*, by McCosh. In volume two he quotes the twelve categories and gives somewhat of an explanation in the context. He quotes the antinomies and indeed tries to give an account of Kant's system, just as Diogenes Laertius did, and Sextus Empiricus, and Hippolytus in some sections of his work. That his criticism is confused and unjust makes no difference. Disregard his criticism, compare his quotations with those made by James and others and we discover Kant. Or we could do with McCosh what we are here doing with Aristotle; discover the effect of his own system, or lack of it, by comparing his criticisms with the quotations he himself makes and those of others.

In the case of Aristotle we are not dependent on fragments, for we have his complete works; we are perfectly familiar with the usages of his language; the only difficulty is textual, and whoever bases a skepticism on textual criticism asserts that not only nearly all philosophy, but nearly all history as well, before the Renaissance, is forever unknowable. This is a reductio ad absurdum. We can with tolerable certainty ascertain the exact wording of Aristotle; but to understand his thought we need also to know the arguments and discussions of previous men which were the motives to his solution. Are these unknowable? My answer would be, try and see.

Of course there should be caution. Philological changes should be ascertained and if relevant taken into consideration. But a priori doubts with regard to the possibility of the problem do not provide the right approach. What is needed is a careful induction of the individual passages. If all of them are entirely buried in doubt and difficulty we are condemned to skepticism. But if the knowledge they give is slight, let us not for that reason despise it. Our conclusions may be far more limited than our desires but I can not consent to a complete skepticism. We must study each passage and in doing so determine the limits of our knowledge.

EMPEDOCLES

In his usual manner, A. in introducing the *De Anima* first enumerates the difficulties and problems to be faced and indicates certain steps which must be taken. In order better to understand the question it is highly beneficial to review what previous thinkers had to say on the subject. Thus "we may adopt what is right in their conclusions and guard against their mistakes." (This view might well be adopted by some contemporary thinkers who seem to think that Descartes belongs to the Middle Ages and that Modern Philosophy begins in the twentieth century.) The men who have considered the nature of the soul may be roughly divided into two groups. The first is that group which regards motion as the most distinctive characteristic of the soul and which includes men, otherwise so far apart, as Democritus and the Pythagoreans. Anaxagoras may also be placed with this group. Empedocles is the most notable example of the opposite party, whose chief psychological principle is that knowledge and perception are to be stressed.

The first mention of E. in the *De An.* is at 404 b 11 ff.[1] After a line and a half of text come three lines of quotation which Diels gives as fragment 109. First we ought to determine the accuracy of the quotation to see if A. is at all careful in recording those he criticizes and second, to try to ascertain if his deductions and criticism are just. A. has quoted this passage twice, the other place being *Meta.* 1000 b 6. In the *Meta.* he wishes to show that according to E.'s theory God would be less wise than anyone else, for like is known only by like and there is no strife in God. This is a conclusion Aristotle will draw in the *De An.* The best manuscripts of the *Meta.* indicate that the second half of the second line is omitted and that the correct order of the first three words in the third line is in doubt. Now if we were desirous of

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1. γαίῃ μὲν γαῖαν ὀπώπαμεν, ὕδατι δ' ὕδωρ,
αἰθέρι δ' αἰθέρα δῖαν, ἀτὰρ πυρὶ πῦρ ἀΐδηλον,
στοργῇ δὲ στοργήν, νεῖκος δὲ τε νείκεϊ λυγρῷ.

determining the precise wording of E. differences like this, and there will be numerous such, might trouble us. But the point is, such differences do not in the least affect the thought of the passage. And after all we are far more concerned with thought than with wording. Of course changes in wording may vitally affect the thought. At such times it is our duty to note them in accordance with our inductive method. In this case the change of wording is negligible. It merely shows either that A. is not always meticulously exact in quoting or the existing manuscripts do not preserve the original rendering. But if we can find other reasons for thinking that this quotation does come from E. we have no reason at all for assuming we do not have E.'s thought. To determine whether this fragment is originally from E. the only method is to find it referred to E. by someone who is not dependent on A. for his information. This is where a skeptical attitude can enjoy itself, for no matter how likely a suggestion may be, one can always ask, "might it not have been otherwise?" Such a skeptical position is, it seems to me, hardly worthy of consideration. Doubt for the sake of doubt never overbalances other evidence, incomplete though it be. If there be evidence against, it must be compared with the evidence for, but the bare possibility that it may have been otherwise is no evidence and need not be considered.

In the case of this fragment, the evidence is fairly good. The quotation is found both in Hippolytus, *Ref. Om. Haer.*, VI 11, p. 165, and in Sextus Empiricus *Ad. Math.* VII 121. Now it is a possibility that Sextus quoted these three lines from *De An.* but the probability is that he did not. For he immediately continues in 123–126 to quote long passages, twenty-two lines in all, which are not found anywhere in Aristotle. In Diels these are fragments 2 and 4. It seems to me then that we can not reasonably deny that Sextus had independent sources and that these three quotations came from the same manuscript which was lying before him as he wrote.

There is another way of confirming this opinion, viz., find other quotations in other authors which present, not the same words or even the same idea, but thoughts which are closely connected with the one we are investigating. The quotation in

De An. 404 b 13–15 states that we perceive earth by earth, etc. This is one application of the principle that like perceives like. Of this fundamental principle we shall have sufficient confirmation in due time. If on the other hand we found ideas so inconsistent that they could not be explained by a natural amount of inaccurate analysis, such as we find in every philosopher, it would be a serious jolt to the position here maintained. It will not be necessary to set down such confirmatory passages at this point as they are to be used more directly in other connections, but specimens may be found in Theophrastus *De Sens.* 10 and 17, especially the latter.[1]

There may be some question as to the admissibility of Theophrastus' testimony. He was A.'s pupil and hence less likely than any other to have independent material. In certain instances this is true, but in others it is not. Theophrastus has interests which differ from those of A. and he is led to explain and refute parts of E.'s system. The very lopsidedness of Theophrastus' interests, which makes Veazie, p. 16, call him "without qualification the worst" source of Empedoclean material, leads us to suppose his independent reading of E. And further, since he was a favorite pupil, he probably had early access to the manuscripts which A. possessed. There is no reason to suppose he learned of E. only through editing A.'s lecture notes.

This certainly is sufficient to show that we do have something positive from E. just as certainly as we have a quotation from Kant in James. We now come to the more interesting and more difficult problem of determining how A. made use of this quotation. Was he biased by his own system? Do his conclusions follow from E.'s statements? The short mention on p. 404 b is not sufficient to form an answer in general. Therefore I shall take up the long critique of E. which begins at 409 b 23 and relate wherever possible the other references to E. to this section.

409 b 23

A.'s aim is not to give E.'s philosophy, but by a critique of

1. *συμβαίνει γὰρ τῷ ὁμοίῳ γίνεσθαι τὴν γνῶσιν.*

all views hitherto expressed to prepare for the exposition of his own. The problem is the definition of soul, i.e. what distinguishes the animate from the inanimate, and does this explain their obvious differences. Because A. is more interested in schools of thought than in individual men, we may suppose that in the critique beginning 409 b 23 he has others besides E. in mind. That like perceives like was held by Plato. In his account of sight it is stated explicitly, *Tim.* 45 c,d. But perhaps Plato was more original than consistent. For in the composition of the soul he placed the other, as well as the same, *Tim.* 37 a, and quite possibly A. found here the solution he offers later in *De An.* A. testifies that Heraclitus also held to this principle, 405 a 27, 28. But it is apparent that A. is thinking chiefly of E. For in 410 a 4–6 he quotes E. as implicitly contradicting himself. And in 410 b 5, the "at any rate"—γε—seems to indicate that this consequence could not be charged to others who held similar views of the soul, and therefore E. is the chief object of criticism.

In the preceding quotation, which the evidence indicates as actually coming from the pen of E. himself, we saw that like is known only by like. Then it follows that the soul, since E. is classed as one who makes knowing and perception the chief characteristics of the soul, must be what it perceives. Stated thus we are reminded of those in modern times who make the soul, if they still care to use the term, a succession of conscious states characterized only by the objects of consciousness. But this was far from E.'s thought, nor is it what A. finds in him. The soul is what it knows. It knows the four elements, as indicated in 404 b 13–15, hence A. concludes that the soul is composed of elements and each element is a soul, for each can know. Let us however keep one distinction very clearly in mind. What A. quotes is one thing, how he understands it is another. Our question, after we have determined that he quoted correctly, is, does he understand correctly? At 409 b 24 we read, "Soul, we are told, is composed of the elements . . ." which, I should think, refers back to 404 b 11. From the quotation there given A. infers that E. taught that the soul was composed of elements and that each element was a soul.

Zeller, p. 802, note 2, 5th German edition, considers the statement, the soul is composed of elements, as A.'s inference and as inexact. He says, "Empedokles hat nicht die Seele aus den Elementen zusammengesetzt, sondern er hat das, was wir Seelentätigkeit nennen, aus der elementarischen Zusammensetzung des Körpers erklärt, eine vom Körper verschiedene Seele kennt seine Physik nicht."

Zeller is right in a sense. E. did not make the distinction between the animate and the inanimate rest on an immaterial substantial soul. He did not make such a soul the Ego within our bodies which knows. But he did constitute the knowing ability out of elements; and it seems to me that Zeller is trying to read E. in terms of some modern behavioristic modification of nineteenth century materialism. If soul means that by which we sense and perceive, then E. constitutes the soul of the elements. In this A. is assuredly correct even if it is an inference.

The only objection to A.'s interpretation is that E. is not interested to any great degree in what A. calls soul. E.'s main interest is physiology rather than psychology. There is no hint in the fragments we have of any attempt to distinguish the animate from the inanimate. If E. had attempted this problem A. would certainly have recorded the fact. And for once the argument from silence has some weight. Indeed instead of trying to accentuate the difference between the animate and the inanimate, E. tacitly erases it. The individual person is able to perceive earth because of the earth in him. Anything then, for all that E. says, which has earth in its composition can perceive earth. This is one of A.'s criticisms of E.; all things would then perceive. If A. is to be blamed at all, it is not for deducing this consequence but for thinking it is a thoroughgoing criticism, as E. admits it. To this effect, we have one line quoted by Sext. Emp. *Adv. Math.* VIII 286,[1] and this same line again together with nine preceding lines in Hippol. VII 29 p. 251; (the chapters immediately preceding contain a wealth of material on E. which

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1. πάντα γὰρ ἴσθι φρόνησιν ἔχειν καὶ νώματος αἶσαν.

can hardly be thought to come from A.) and the same thought is expressed again in Hippolytus, VI 12, p. 165.[1]

These passages would indicate that it is the inherent nature of things to know and think. The difference between animate and inanimate objects is one of degree only. E. has not been the only one so to hold. Giordano Bruno was of this opinion. Similar sentiments, expressed as vaguely as those of E. himself, are found in Spinoza.

" . . . in proportion as any given body is more fitted than others for doing many actions or receiving many impressions at once, so also is the mind, of which it is the object, more fitted than others for forming many simultaneous perceptions;" and, II XIV: "the human mind is capable of receiving a great number of things and is so in proportion as its body is capable of receiving a great number of impressions." But the clearest and most straightforward defense of this position is the *Monadology* of Leibniz. There is then nothing in E.'s position which is too fantastic to find reputable defenders. And in deciding what E. said and how correctly A. understood him, we should pay as much if not more attention to the logic of the theories than to lengthy philological investigations.

Contrary to Zeller, then, I would say that A. is essentially just in attributing this inference, viz., the faculty of perception is composed of material elements, to E. but apparently mistaken in supposing that E. would not accept the consequence that all things think. We do not expect to find a quotation from E. stating explicitly that the soul is composed of the elements, for everything is composed of the elements and E. is not interested in exactly the same problem as A. In drawing the inference A. is doing only what any critic should and must do.

But A. also says that each element is a soul. Is he exact here? A.-Ed. Chaignet, *Histoire de la Psychologie des Grecs*, vol. I, p. 85, thinks not. "Ainsi non seulement les éléments seraient animés, mais ils seraient chacun une âme. Cette opinion est si étrange, elle comporte si mal avec les autres théories d'E. que

1. After quoting the lines found also in 404 b 11 ff., see p. 11 above, Hippolytus continues, Πάντα γὰρ, φησίν, ἐνόμιζε τὰ μέρη τοῦ πυρὸς τά ὁρατὰ καὶ τὰ ἀόρατα φρόνησιν ἔχειν καὶ νώματος αἴσαν.

Zeller, malgré l'autorité d'A., ne croît pas pouvoir la lui attribuer, et je partage ce sentiment."

To anticipate what will become more fully clear only towards the end of this investigation, I would say that this is not only consistent with what we know of E. but in reality is the key to the understanding of him.

Hicks, however, points out that the proposition under discussion is A.'s inference and continues, note on 404 b. 12, p 221, "If soul is compounded of the elements and a part of each element enters into its composition, then, in virtue of being such a part, anyone of the elements may be said to be a soul." This seems to have been a slip of the pen on Hicks' part. If A. had concluded that each element must be a soul because it was a constituent part of the whole soul, he would have committed the fallacy of the distributive and collective use of each and all. But A. does not do this, as is seen in a relevant passage, *De. Gen. et Corr.* 334 a 9–15, which Hicks quotes. There, A.'s argument is, that if each element be a soul, the soul, or at least that soul, will have the qualities of fire qua fire. But if the soul be a composite, though it may no longer have the qualities of fire, it will have the qualities of body qua body, since no combining of bodies can do away with length or weight. Now Hicks really recognizes this, for he tacitly refers to the above-mentioned fallacy and gives the correct explanation as taken from Simplicius, but had Simplicius never said anything we would still have the explanation. A. is primarily interested in soul, i.e. the distinction between the animate and the inanimate. Previous thinkers considered soul either the principle of motion or the principle of perception. E. is among the latter, hence, for E. anything which knows is a soul. Therefore A. is quite justified in drawing this inference. If we are to criticize him at all it will be either that he considered E. interested in the distinction between the animate and the inanimate or that he supposed his inferences could have changed E.'s mind. A. is easily defended on this point. If E. wanted a complete system this distinction would have had to be made. But as I have already shown, E. considers this to dismiss it, and the second point rests on A.'s belief that his system is final and therefore any inference which is incon-

sistent with his principles points out a weakness in the philosophy of others. But to disagree with A. on this is not the same as to charge him with misreading his predecessors.

Having drawn these inferences, which we have shown to be legitimate, A. proceeds to criticize E.'s fundamental psychological assumption, like is known by like, by deducing impossible consequences. The first of these is that, although composed of the same elements, nevertheless, flesh, bone, man and God are very dissimilar. How does the soul perceive these compounds? That they are real compounds and not mere haphazard aggregates, A. quotes E. himself, 410 a 4–6.

To this difficulty there is an obvious solution, viz. the soul contains the principle of harmony or proportion. But this is a far-reaching development of the original theory with which we cannot now deal. A. will discuss it presently. The immediate point of interest is A.'s quotation. Did E. posit a principle of proportion in things?

Simplicius gives the same quotation, *Phys.* 300, 19[1] and adds another line. If he had given only the three lines found in A. we could not be sure that he was not copying from A. But the extra line indicates an independent source, and it is impossible to think of Simplicius as dependent on A. in view of the great number of quotations found on his pages. Moreover, the thought of that last line makes our argument still more convincing because it is really more clinching for A.'s argument than the three lines he himself quotes. Similar ideas are expressed in Simplicius *Phys.* 32, 3; from which Diels gets fragment 98.

We may also refer to Aetius V 22, 1. There it is said, "E. generates flesh from an equal mixture of the four elements; nerves were mixed of fire and earth by water as much again; (one part fire, one part earth and two parts water?); fingernails are grown by animals from the nerves where they are chilled in meeting the air. Bones are of two parts water and earth and four of fire, . . ."

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1. ἡ δὲ Χθὼν ἐπίηρος ἐν εὐτύκτοις χοάνοισι
τὰ δύο τῶν ὀκτὼ μερέων λάχε Νήστιδος αἴγλης,
τέτταρα δ' Ἡφαίστοιο. τὰ δ' ὀστέα λευκὰ γένοντο
Ἁρμονίης κόλλῃσιν ἀρηρότα θεσπεσίηθεν,

τουτέστιν ἀπὸ τῶν θείων αἰτίων καὶ μάλιστα τῆς Φιλίας ἤτοι Ἁρμονίας· ταῖς γὰρ ταύτης κόλλαις ἁρμόζεται.

A.'s objection then seems clear cut. Flesh and bone are what they are because of a certain proportion, as well as because of certain elements; and unless there be a principle of harmony in the soul, flesh and bone qua flesh and bone will remain unrecognized though qua elements they may be known. This recalls the discussion of 407 b 27–408 a 28. It is a criticism of the harmony theory. Harmony has two meanings, first, a combination of bodies, and second, the formula of the compound. In the first case, what compound can be pointed out as intellect and what one is sensibility? A. of course supposes that this is an unanswerable question. In the second case, if the mere formula of the compound is a soul, there will be in the body many souls, since there are many formulas, as of bone and of flesh. And the unity of the soul of a person is destroyed.

It might serve as a relief and a stimulation to break the continuity of the discussion at this point for the purpose of pointing out in modern philosophy a problem somewhat similar to this one. Today, all group-phenomena make quite popular subjects of investigation. But before we deal with group-minds, we must first have dealt with mind itself. And this presupposes some theory of life, or as A. would say, of soul. But right here, in distinguishing between one living being and what is not one living being, we find the same difficulty which troubled A. in the section under consideration. It is generally agreed that man is a unitary living being. Now, instead of saying that there are a group of harmonies or formulas of flesh and bone in man's body, and hence the unity of his personality is destroyed; we must face the fact that there are a number of corpuscles in man's blood, or a number of cells in any animal. Are these, then, living beings? Several arguments can be adduced for either view. Here then, is a delicate point which a comprehensive philosophy must clear up. What is the difference, if any, between a hive of bees and the group of living cells we call a plant? It may not be as insistent as many other problems, but, nevertheless, it is a real problem.

We return, however, to the subject matter. By these reflections on the widely accepted harmony theory, there are suggested to A.'s mind several questions which are intended to puzzle E.

They are: Is the soul such a formula? Or is it something else superimposed on the compound? Does Love cause a chance mixture or a determinate one, one with a definite formula? Is Love itself a formula or not?

But A. does not attempt to answer them, or to intimate how E. did or might have answered them. The only bit of information we can squeeze out of this section is that E. held that each part of the body was a compound of given proportions and is hence faced with the two general difficulties of the harmony theory pointed out above. Yet E. might have succeeded in escaping these, for A. himself practically confesses that this theory contains the guiding thread to the final solution, 408 a 24–28.

The main objection, then, is that of 410 a 7 ff., viz., how can one compound know another of a different formula? Of course, A. has in mind his own solution of the problem in making the criticism. He introduces all this history only to prepare the student for his own system. But regardless of that, the criticism is so applicable that it is impossible for anyone to charge A. with misrepresenting E. owing to a bias of his own. All that is necessary is E.'s fundamental postulate that only by similars can similars be known. And there is absolutely no evidence that E. ever modified this bald statement in any manner similar to A. A. is leading the student to see that some modification is necessary. And throughout the process he is entirely fair to E.

So far our statements have been very positive; but we are not to suppose that no difficulties at all exist. For example, if we turn to *De Gen. et Corr.* 323 b. 10, we read to the effect that Democritus "had a peculiar doctrine all his own, for he says that both the agent and the recipient are the same and similar. For dissimilar things cannot be affected by each other." This apparently denies that E. held what is assumed to be his fundamental doctrine. Beare, p. 98, speaking of the dictum, like is perceived by like, says, "The principle itself is a deduction from the metaphysical theory that 'like affects like' and seems intended merely to procure for the latter its psychological application." If this is so we have trouble in A.

H. H. Joachim in *A. on Coming to Be and Passing Away* says in his notes on this passage, "It is strange that A. should attribute

this view to Democritus alone: for in discussing the theory of E. that 'Like perceives Like' he treats it as an application to the relation of the Percipient and Perceived of the general principle that 'Agent and patient are like'." And he refers to *De An.* 409 b 23 ff.

We must also compare with this *De An.* 410 a 23–25.[1] Here A. charges E. with inconsistency because he said both that only dissimilars are capable of interaction and at the same time that like is perceived by like.

Various students differ as to the interpretation of this seeming contradiction. Beare and Joachim seem to agree, but we can learn little from Joachim, and Beare is not treating specifically of this text, though he really ought to have noted it. But Clara E. Millard, *On the Interpretation of Empedocles*, p. 41, differs from these two. "It has been urged that universal mixture is the only possible basis for interaction, since only like can act on like. But while likeness is the general basis of attraction and of perception with E. it is not a necessary condition of all forms of interaction. The hardening power of fire is an operation exerted upon other elements." And she refers to *De Gen. et Corr.* 323 b 10 to show that Democritus alone held that similarity was the basis of interaction. And further she criticizes Beare for the statement quoted above.

Hicks in his note on 410 a 23 quotes 323 b 1 ff. and says, "This was the opinion of E. who made his four elements qualitatively different and (unlike A.'s *ἁπλᾶ σώματα*) immutable. The opposite view, viz. that like acts upon like, was held by the Atomists who recognized no qualitative distinctions in matter. . . . . E., like all the rest, is open to the charge of inconsistency." (i.e. all the rest except Democritus and Anaxagoras.)

Gomperz, *Greek Thinkers*, translated by Magnus, p. 237, seems to agree with Beare by saying, "The perception which made the deepest impression on the mind of E. was that of the mutual attraction of like by like." And Burnet, *Early Greek Philosophy*, p. 246, 7, says, "It follows that we must carefully

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1. *ἄτοπον δὲ καὶ τὸ φάναι μὲν ἀπαθὲς εἶναι τὸ ὅμοιον ὑπὸ τοῦ ὁμοίου, αἰσθάνεσθαι δὲ τὸ ὅμοιον τοῦ ὁμοίου καὶ γινώσκειν τῷ ὁσίῳ τὸ ὅμοιον.*

distinguish between the Love of E. and that 'attraction of like for like' to which he also attributed an important part in the formation of the world. This latter attraction . . . depends simply, as we shall see, upon the proper nature of each element . . ." Tannery also in *Pour l'Histoire de la Science Hellène*, p. 308,9, speaks of the property immanent in matter which causes the attraction of like by like.

We might reflect that the elements are immutable and therefore cannot interact at all, thus approaching the Leibnizian monad and the theory of pre-established harmony. But we should be on our guard. The pre-Socratics are rich in suggestive material but they rarely work out their suggestions. Nor are the suggestions of any one of them always self-consistent. Philosophy was in its infancy then, and a good many points which seem obvious to us were very puzzling at that date. Terms were ambiguous. Analyses had not yet cleared up the difficulties. Certainly if E. denied the interaction of unlikes he did not mean to deny that a lump of earth dropped into a pool of water would make a splash. Nor did he exclude the composition of elements into flesh and bone, as we have seen. He seems to mean only that one element cannot cause qualitative change in another. But then how could one lump of earth cause qualitative change in another lump?

Perhaps Beare, Gomperz, Burnet and Tannery are misleading us. Maybe, as A. indicates, E. did not affirm that like acts on like. But about the only use for such a priori suppositions is to drive us to the sources.

The only fragments which promise any help are, Diels 22, 33, 34, 37, 56, 62, 73, and 90. Some of these, like 33 and 34, are so short and inconclusive that we hardly put any hope in them at all.

Fragment 22 comes from Simplicius *Phys.* p. 160, 28. On the preceding three pages there have been abundant quotations from E. but unfortunately the context does not help us. We are limited to fragment 22 and in this fragment especially to lines four to six, where he says, "All those things which are most readily mixed are similar to one another." Undoubtedly the fragment seems to indicate the interaction of similars, but I

think everyone will agree that alone it is not conclusive. If we find more like it, we may be forced to say that A. was wrong in 323 b 10.

Fragments 33 and 34, one from Plutarch, the other from A., are, on account of their brevity, still more inconclusive, though in the opposite direction. But at least A. in the *Meteor.* 381 b 31 is consistent with himself in *De Gen. et Corr.*, for evidently unlikes interact in some manner.

Fragment 37 is also from A., *De Gen. et Corr.* 333 a 35. Here A. is arguing that E.'s theory of a plurality of irreducible elements renders impossible any explanation of growth, for the only sort of increase would be addition. Now growth is not mere addition because growth displays a regularity and plan for which mere addition cannot account. In the argument A. uses what is now fragment 37. At first glance this seems to indicate the interaction of likes in conflict with A.'s testimony a few pages before. But in reality there is no conflict because addition is not the kind of interaction referred to in the first passage.

Fragment 56 is found in Hephaestion, *Ench.* I p. 2. He is discussing the quantity of syllables for purposes of scansion and quotes lines of poetry as illustrations of his rules. Needless to say the context gives us no help. The line he quotes from E. indicates that fire can produce a qualitative change in salt. Yet without the original context it will always remain a question how much emphasis can be placed on an isolated line and whether we should refer to it at all. Besides, salt is not an element; it may therefore possibly have fire in its composition. Hence it cannot be used to support A. against Beare et al.

Fragment 62 from Simplicius *Phys.* 381, 29 is also inconclusive. It merely indicates that fire had something to do in the original generation of men and women. Fire was probably in the composition and the result insisted upon was a motion of the compound, rather than a qualitative change of an element.

But we may find something a little more definite in fragment 73, from Simplicius *De Caelo* 530, 5. He is discussing the functions of love and hate and the whirl which A. claims cannot keep the earth in its place. In doing so he quotes quite a number

of lines from E. The lines under discussion as quoted by Dr Leonard are:

> "As Kypris after watering Earth with Rain
> Zealous to heat her, then did give Earth o'er
> To speed of Fire that then she might grow firm."

Now if this translation be correct, it would seem to indicate that fire hardens earth; and if hard and soft are qualities, then one element would be producing a qualitative change in another. But aside from the various readings in the MSS. the sentence is incomplete and further we do not know how much emphasis to place on "grow firm," κρατῦναι.

The last fragment that seems to have anything to do with the subject is 90, taken from Plutarch, *Quaest. Conviv.* IV 1, 3, p. 663 a, and repeated with an insignificant change in Macrobius, *Sat.* VII 5, 17. In Plutarch there is some difficulty as to whether nature takes the required nourishment from similar or dissimilar things, but the best opinion reads ὁμοίων, although Goodwin in his translation puts "dissimilar." The main point as I see it is that whether the nourishment comes from similars or from dissimilars, when in the body, it goes to similars, as a sweet part of the body grasps after sweet nutriment and so on. Macrobius bears out this interpretation fully. This fragment, then, with its two contexts, illustrates without any ambiguity the interaction of like upon like in the form of attraction. But it gives us no right to generalize and say that interaction occurs only between likes, any more than the preceding fragment can sustain the contrary generalization.

There is one other reference we might mention. In Theophrastus, *De Sens.* 9, we read (Stratton's translation), "Pleasure is excited by things that are similar (to our organs) both in their constituent parts and in the manner of their composition; pain by things opposed." And in section 16: "Moreover his explanation of pleasure and pain is inconsistent, for he ascribes pleasure to the action of similars, while pain he derives from opposites." Theophrastus calls him inconsistent because he assumes both pleasure and pain to be sensations and therefore the result only

of the interaction of likes. E. can be acquitted of this charge only by assuming in opposition to Theophrastus[1] that E. did not regard pleasure and pain as sensations on some basis such as the lack of organs corresponding to the five familiar ones. Or in other words, we would have to suppose that pain, not requiring sense organs, might be due to the interaction of unlikes. But neither has intellect any organ and it is difficult to see why E. should have made such a radical distinction between acquiring knowledge and suffering pain in view of their similarity.

Now what can be derived from all this testimony? Skepticism merely? The testimony in a law court, we must remember, is often quite as perplexing and often more so; yet many seeming impossibilities have been untangled. One conclusion at least we may adopt, viz. A. in *De Gen. et Corr.* was correct as far as E. is concerned. We have found no evidence that he made similarity the basis for all kinds of interaction. On the contrary, there is evidence that likes act on one another and unlikes do the same. Beare was evidently mistaken as were the others if they meant the same thing. Miss Millard is justified in her criticism.

But we have seen that we cannot from the evidence conclude that dissimilarity is the basis of all forms of interaction. Yet this brings us to another difficulty. In *De An.* 410 a 23,[2] A. assumes that E. made dissimilarity the necessary basis for qualitative change, though not necessarily of all interaction absolutely. We have found no other evidence that like is unaffected by like, and some seemingly to the contrary. Then we must decide either that A. is incorrect at this point or that Theophrastus is incorrect and that Simplicius, fragment 22, and Plutarch and Macrobius, fragment 90, may be interpreted consistently with the statement that *ἀπαθὲς εἶναι τὸ ὅμοιον ὑπὸ τοῦ ὁμοίου.*

As somewhat of a consolation for the confusion of this result it may be brought to one's attention what must have become

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1. *De Sens.* 16. *αἰσθήσεις γάρ τινας ἡ μετ' αἰσθήσεως ποιοῦσι τὴν ἡδονὴν καὶ τὴν λύπην, . . .*
2. cf. note on p. 21.

increasingly evident to anyone who has carefully followed through this discussion and examined all the sources, viz., the real trouble is a lack of definite analysis. Interaction, qualitative change, like and unlike were used by E. in an almost popular sense. There is no careful definition and hence the various brilliant suggestions—and after all E. had a brilliantly inclusive world-view—when examined in detail often dissolve into hopeless inconsistencies. It is for us to remember that the confusion of these difficulties was a necessary step in the solution of a problem which first had to be clarified. And modern attempts at sounding the depths of quality and quantity ought to make us respect all the more the degree of success which attended the early ones.

410 a 13

In advancing to the last section discussed, we omitted one short paragraph criticizing E.'s theories on the basis of A.'s categories. The verb "is" and the term "being" have several meanings, corresponding to the categories of substance, quantity, quality, action, passion and so on. These categories are quite distinct from one another. They have no common element. "Et par suite," says Rodier, in loc. "on ne peut pas dire que l'âme soit formée des éléments communs à toutes les catégories, puisque le seul rapport qu'il y ait entre elles c'est qu'elles sont toutes relatives à une même chose." But if its composition be confined to one category, it cannot know any other. And if its composition include all the categories, the soul will be at once quantity, quality and substance. Just why this is impossible, A. does not say and Hicks makes a note that the argument is rather elliptical. Themistius 33:27—35, or, 61, 5 Sp. writes,[1]

"For the genera are our thoughts and not elements of things. But even let us grant that the categories are elements. Is then the soul composed of all

1. νοήματα γὰρ ἦν ἡμέτερα τὰ γένη καὶ οὐ στοιχεῖα τῶν ὄντων. ἀλλ' ἔστωσαν καὶ αἱ κατηγορίαι στοιχεῖα. πότερον οὖν ἐξ ἁπασῶν ἔσται ἡ ψυχή; ἀλλ' οὐ δοκεῖ κοινὰ πασῶν εἶναι στοιχεῖα, οἷον ἀνθρώπου καὶ τοῦ ποιεῖν καὶ τοῦ πάσχειν καὶ τῶν ἐφεξῆς. ἀλλ' ἐκ μόνης τῆς οὐσίας; πῶς οὖν γνωριεῖ τὸ ποσόν; ἢ φήσουσιν ἑκάστου γένους εἶναι στοιχεῖα καὶ ἀρχὰς ἰδίας ἐξ ὧν τὴν ψυχὴν συνεστάναι; ἀλλ' ἡ μὲν ψυχὴ οὐσία, ἐκ δὲ τῶν τοῦ ποσοῦ στοιχείων ποσὸν γίγνεται καὶ οὐκ οὐσία, καὶ ἐκ τῶν τοῦ πρός τι πρός τι γίνεται καὶ οὐκ οὐσία.

of them? But it is agreed that there are no elements common to all of them, for instance, man, action, passion and so forth. But is it composed of substance alone? How then will it know quantity? Or do they say that there are elements and principles peculiar to each genus out of which the soul is composed? The soul, however, is substance; but out of the elements of quantity, quantity arises and not substance, and out of relation, relation arises and not substance."

Sophonius also has attempted to clarify the argument, 33, 18–25, but with little success.

The first part of the argument is clear enough however. E. has composed the soul out of elements, and these are, in A.'s philosophy, substances. Then if like is known only by like, the knowledge of quantity, relation and the others is inexplicable. Passages like these lead us to charge A. with bias, for E. had nothing approximating A.'s categories. Why then should he be criticized on such a basis? But A. would have called such a question beside the point. If the categories are true philosophy, as A. believed, then E.'s ignorance is no excuse. A. is not complaining that E. is inconsistent with his own principles exactly, though he does that at times too, but that he is inconsistent with truth. He is asking puzzling questions of an old theory in the light of recent developments. These questions are not so much for discrediting E. but rather, as is more consistent with A.'s temperament, for showing how an examination of E. leads to A.'s own psychology. You will recall how this attitude is explained in *Eth. Nic.* 1096 a 11 ff. He hesitates to proceed because it will entail an attack on his friends. "It would seem best however, and obligatory to sacrifice, for the salvation of truth, even our dearest things, especially since we are philosophers. For, although both are dear to us, it is a sacred duty to prefer truth." So, sections such as this may at first seem unsportsmanlike. but they are easily noted, entirely in harmony with A.'s avowed purpose, and can in no conceivable way deceive anyone with regard to preceding history.

410 a 27

At this point a new departure is made which becomes the final criticism of E. in the first book. The first objection is that

bones, sinews and hair, because they are composed of earth alone, can perceive nothing at all, and hence cannot perceive their like, although, according to E. they should be able to. This promises to be interesting, for just above A. had quoted E. to the effect that bones are composed of part earth, part water and part fire. Following this he uses bone as well as man as an illustration of a compound which a simple element could not know. In Aetius V. 22, 1, the sinews, instead of being composed of earth alone, have also fire and water in them. So we seem to have found A. clearly in error, whether judged by others or compared with himself. The second point in these two and a half lines is the apparent implication that E. claimed bones, sinews and hair did not perceive, *καίτοι προσῆκεν* had he been consistent.

In both these points the mistake is our own and not A.'s, although we may feel that A. should shoulder the blame. Just how far a man can adopt A.'s position that all other systems must be judged on the basis of his own, just how far one can do this and not arouse antagonism, depends partly on the temperament of the reader and partly on the frankness of the presentation. So far this paper has been defending A.'s attitude, though it became difficult in the case of the categories. Here, however, we think A. might have been more explicit. There is no hint given that it is A. and not E. who said bones are composed of earth alone, though with reference to the statement that earth perceives nothing we have been sufficiently informed that E. held the contrary. In *Meteor.* 389 a 12, A. states that in bones, sinews and hair, earth preponderates. Themistius also bears witness,[1] 34: 7–11, or, 61, 26 Sp., "E. astonishes us in saying, by earth we perceive earth, not seeing that even in the parts of living beings, all those things which are made of earth alone, as bones, nerves and hair, are least of all capable of sensing, and yet they should at least be able to perceive their similars."

In *De An.* 410 a 27 ff. and 435 a 11 ff. we find the statement that objects composed of earth alone are incapable of perception. Thus A. in the section under discussion has not made any tech-

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1 *θαυμαστὸς δὲ Ἐ., "γαίῃ μὲν γὰρ γαῖαν ὀπώπαμεν" λέγων, οὐχ ὁρῶν δὲ ὅτι καὶ ἐν τοῖς τοῦ ζώου μορίοις ὅσα γῆς ἁπλῶς, οἷον ὀστᾶ νεῦρα τρίχες, ταῦτα τῶν ἄλλων ἀναισθητότατα. καίτοι προσῆκεν τῶν γοῦν ὁμοίων ταῦτα αἰσθάνεσθαι.*

nical mistake; but it requires enough patience to refer to his other theories to appreciate this. If in this and other cases he had inserted, as occasionally he does, the phrase, "as we have shown elsewhere", he might have been saved a great deal of criticism. The explanation is, however, that A. did not write for those who so lacked patience that they could not acquire a complete system of philosophy.

A. goes on to argue that God will be very ignorant because, while in him is no strife, things could not have become had not strife entered into their composition. Hence God is excluded from such knowledge. In thus arguing, A. makes one statement of minor importance which, nevertheless, requires notice. The element, strife, "God will not know; while mortal things, being composed of all the elements, will know them all." The question centers in the words, "mortal things being composed of all the elements." Is A. pointing out an inconsistency in E.'s theory, i.e. did E. say that mortal things were composed of all the elements? And if he did, did he mean merely that all things collectively are composed of the elements or that each individual object contained a share of each element? Or is this again an illustration of A.'s criticizing E. on the basis of A.'s own theories?

Torstrik has concluded that the words in question are spurious. Rodier in his notes says, "La raison invoquée par Torstrik est qu'E. n'a pas dit que tous les éléments fussent contenus dans chacun des composés. Mais il convient de remarquer 1. que si aucun fragment d'E. ne prouve qu'il ait admis l'opinion en question aucun, non plus, ne prouve le contraire . . . 2. que le mot *θνητά* dans le texte d'A. ne désigne, sans doute, que les êtres vivants . . . et qu'il est vraisemblable qu'E. a admis, pour ceux-ci du moins, que tous les éléments entrent dans leur composition."

Hicks, referring to Themistius 62, 6–11 Sp., voices some discouragement and satisfies himself with the general clarity of the argument. And that is clear enough. Hicks is probably right so far as an irrefutable conclusion is concerned. Anything else must contain considerable guesswork. But there are certain considerations which may justify one guess rather than another. Rodier said that it is impossible to show whether E. admitted or denied that every living being contained a share of each of the

elements. And here I am assuming that *θνητά* does mean "living beings" rather than "things". For A. is very careful of his terminology and Themistius explicitly bears out this interpretation in the above-mentioned quotation which reads as follows:[1]

"It also follows for E. that God is most unintelligent. For his Sphere-God, coming forward as he does through the commingling efforts of love, and having no share of hate, will be the only one who will not know hate. But all living and mortal beings by participation in all things will know all of them. For mortal beings are composed of all the elements."

Now throughout this study I have had in mind, perhaps more constantly than some other writers, a rather definite conception of E.'s system. To a great extent neglectful of detail, he aimed to attain a comprehensive world-view. He tried to describe a continuous development from the simple to the complex, from elements and contact to sensation and thought. And in Theophrastus *De Sens.* 11, we find him attempting, on the same basis, a theory of temperament. This development from physics to psychology is continuous, it has no break. Psychic phenomena are immanent in the physical, and the physical explains the psychic. "All things have fixed intent and share of thought." This means, according to Dr. Leonard, that all things are conscious living beings. We immediately think of Leibniz or, with limitations, of G. T. Fechner, as analogies. Hence E. would admit that all things have soul—much to A.'s disgust. Now if these suppositions be correct, then each thing or each living being, for they are the same, has not a share of every element, for the proportions given of the composition of some things omit some of the elements. Bone, for example, has no air in it. Then if the words in question do not represent E. they must be A.'s own opinion. And this seems to be consistent with A.'s thought in general. In *De An.* 435 a 11 ff. it is stated that the bodies of animals are compounds. For reasons given in *De Gen. et Corr.* II 8, they must therefore contain all the elements. The statement in *De An.* 435 b 1, that plants are made of earth cannot be taken absolutely for the same reasons.

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1 *συμβαίνει δὲ Ἐ. καὶ ἀφρονέστατον ποιεῖν τὸν θεόν· ὁ μὲν γὰρ σφαῖρος αὐτῷ ὁ θεὸς παριὼν ἐκ τῆς κατὰ τὴν φιλίαν συγκρίσεως, ἀμέτοχος δὲ ὢν τοῦ νείκους, οὐ γνωριεῖ μόνος τὸ νεῖκος, τὰ δὲ ζῷα καὶ θνητὰ πάντα τῷ πάντων μετέχειν ἅπαντα γνωριεῖ· ἐκ πάντων γὰρ τὰ θνητὰ τῶν στοιχείων.*

The most probable conclusion, then, is that the words are genuine, Torstrik to the contrary notwithstanding, and represent A.'s own opinion. If one hesitate to accept this conclusion, he might find a slight inducement to become more favorably inclined by considering that θνητά might be restricted to the meaning of ζῶα, which certainly have all four elements, as well as being the equivalent of ἔμψυχα which, since they include plants, include also the very slight difficulty of *De An.* 435 b 1.

The closing criticism is perhaps the most searching of all. What gives unity to anything in general and to the soul in particular? For the soul must be one. A few pages later he resumes the subject in objection apparently to Plato's trichotomy. But if the soul be naturally divided in anyway whatsoever, and yet possess sufficient unity not to be called a mere aggregate, there must be a higher unifying principle. And this principle should have been called soul at the outset. This may call to our minds the sharp division Kant made between sensation and thought, and how his successors erased that distinction and restored unity. A. wants unity also, even though, near the end of the *De An.*, he makes enter from without a something very different and seemingly unconnected or ununified with the soul itself. But whether A. is violating his own principles or not, we cannot here enquire. E. is violating them. From lack of careful analyses he failed to see the need of a formal cause. His elements are merely the substratum. Why they should adhere to one another, he does not say. At least A. thinks he does not.

This problem is a somewhat intricate one; it involves whatever E. said about Love and Hate; so, since it receives such a short notice here, and since it will be resumed in book two, we shall defer its discussion until then.

It is doubtful whether the paragraph immediately following is aimed at E. or not. It is stated to be a criticism "alike of those who derive the soul from the elements on the ground of perception and knowledge, and of those who define it as the thing most capable of causing motion." This obviously includes not only the greater figures of E., Anaxagoras and Democritus, but also a host of minor philosophers, some of whom perhaps have left no record behind them. The part of this criticism which would apply to E. if any, is the statement that "plants are found to live without any

share in locomotion or sensation and many animals to be destitute of thought." But if the account of E. given above is in any degree correct, we must confess that A.'s objection, from E.'s point of view at any rate, is a glaring petitio principii. The brevity of the section however, shows that A. did not mean it to be a final and complete criticism. It is not addressed to E. in particular and might therefore very well be directed against those who admit that plants have no sensation and yet assert that the soul is derived from the elements.

De Anima Books Two and Three.

The first mention of E. in book two is in reference to the same subject which furnished A. with his last criticism of E. in book one. Some inconsistencies in E.'s account of botanical phenomena lead him again to raise the question of unity.

E. is mistaken, A. claims, when he says the roots of plants grow downwards because they contain earth, and the stem and leaves grow upwards because they contain fire. Aetius V 26, 4 says that plants grow out of the earth by reason of the heat in the earth. This at first may seem slightly inconsistent with A.'s statement, but obviously before the plant has pushed its head above the ground, the fire, which even according to Aetius is later in the fruit, is both in the embryonic plant and in the earth also. The fire then would want to disengage itself from the ground and arise toward the heavens. Theophrastus knows nothing which would vitiate A.'s statement, for in *De Caus. Plant.* I 12, 5 he also locates earth in the roots of plants and fire in their leaves.

The reasons A. objects to this account of affairs are two, viz. the meaning of up and down, and the lack of a principle of unity. E. saw that roots do grow downward. Since, then, earth is beneath, and since like attracts like, he can explain growth by assuming that there is earth in the roots of plants. But if this assumption were true, it would lead to difficulties. For there is a functional analogy between the heads of animals, which are uppermost in the universal sense of up, i.e. nearer the sky, and the roots of plants, which from the standpoint of the universe grow down. The functional analogy is that both are the organs by which nourishment enters the body. Now, for a living being,

"up" means "toward the head," hence in the case of a plant, up means down.

In the *Phys.* 208 b 14 ff. A. says, "Such things, up and down, right and left, do not exist in relation to us only. For with respect to us, they are not always the same since they come into being according to the position in which we place ourselves. Therefore the same thing is often right and left, above and below, before and behind. In nature however, each (direction) is determined apart (from us). For up is not just any direction, but that direction in which fire and light things are borne. Similarly, down is not just any way, but the direction of those things which are earthy and possess weight."

More to the point is *De Incessu An.* 705 a 29–b 1. "Not only do animals have a top and bottom, but plants as well. This is determined by function and not by position merely in respect to earth and sky. For whence nourishment enters each being and the direction of growth is up. And the end where this stops is down. For the first is the beginning and the other is the end. But the top is the beginning. Although in the case of plants, it might seem that the bottom should more properly be the beginning; but up and down do not have similar positions in plants and animals. With respect to the universe the cases are not similar; but with respect to function they are the same. For in the case of plants, the roots are the top; for this is where nourishment enters plants and by means of these (roots) they receive it just as animals do with their mouths."

And there are a number of other references of similar nature.

A., then, would seem to assume that if the head of a plant is composed of earth chiefly, then the head of an animal must also be so composed. Therefore, E.'s assumption to explain the growth of plants fails utterly in explaining the growth of animals.

We can hardly be fair and at the same time criticize A. for noting the functional similarity between the heads of animals and the roots of plants. Today the botanists hesitate to say that a plant receives nourishment through its roots. What happens is that water (and salts) is received through the roots and carbon dioxide through the leaves. The chemical process, $5H_2O+6CO_2—C_6H_{10}O_5+6O_2$, represents the plant's manufacturing nourishment out of other materials, and is held to be essentially

different from the chemical process in animals. But A. did not recognize that chlorophyll and chloroplasts characterize plants only and thus distinguish them from animals, nor was he familiar with enzymes. Hence it is hardly right to criticize him on this basis. Let us assume that plants eat through their roots. Still it seems strange to us, and it must have seemed strange to the Greeks, to say either that the roots of plants are their heads or, if the flower is the head, that the head is on the bottom. Today we not only speak of a head of cabbage or of lettuce, but also of the heads of wheat and rye. We say corn has ears, and surely ears are on the head. Chrysanthemums have heads, in technical botanical language, as do daisies also and sunflowers and dandelions and compositae in general.

The Greeks used the word κεφαλή in the same way. Theophrastus, *Hist. Plant.* I vi 9, uses it in a section where he is trying seriously, and not absurdly either, to make out analogies between the parts of plants and the parts of animals. Thus he speaks of muscle, veins, flesh and marrow. In the same work, IV xii 3, he uses the same word twice and it does not mean roots. In VII ii 2, with respect to beets and onions, he uses the word "head" to denote something on or under the ground. Again in IX viii 2, he uses κεφαλή with respect to the flower of a poppy.

Finally, it does not seem clear why organs functionally similar should be likewise similar in respect to their composition. We are so accustomed to things vastly different structurally performing the same function. For example, a lady's wrist-watch has a mechanism quite unlike an electric telechron and this in turn has nothing in common with a water clock or sundial. Yet all of these keep time. Nevertheless, A.'s assumption is absolutely necessary to his criticism of E.

A.'s second criticism of E. in this section, that concerning the principle of unity, is a more serious one. To quote *De An.* 416 a 6, "Besides, what is there that holds together the fire and the earth, tending, as they do, in opposite directions? For they will be rent asunder unless there is something to prevent it: while if there is, it is this which is the soul and the cause of growth and nourishment." Hicks in his notes on these lines says, "Whether E. really thus ignored this unifying function of soul is extremely doubtful." But no references are given.

This question, however, cannot be restricted to plants; animals also must have a unifying principle, and, to use a distinction which E. discarded, inanimate objects as well. The question really is, why is anything an object? This is the problem, the discussion of which we omitted at 410 b 10, where it was applied specifically to the soul. The ordinary conception of what constitutes an object for E., derived from A. and understood in the terms of last century's physics, is that the elements are like so many motionless billiard balls to be set in motion only by the love of the game. Love and Strife, then, were the forces which cause things to move. Burnet and Gomperz modify this conception. For them, the elements themselves have a minimum of power by which they can attract or repel each other. Yet if this be correct, we must guard against the same mistake. We are always in danger of interpreting E. in terms of the physics we know best. Moreover the modification referred to, the mutual attraction among like elements, however interpreted, does not explain the unity of the plant or other object composed of several constituents.

In the first book, A. complains that E., by making the elements the substratum, fails to see the need of a formal or final cause. He has given no explanation of how a combination of elements can make a soul. It would seem therefore that aside from calling every element a soul, and tacitly inferring that a collection of souls must result in a soul—and this is exactly where the real difficulty lies—E. has no answer. Hence the unity of the individual living being is left unexplained. Not only is it unexplained, but E. has shut the door to any possible explanation, A. thinks. For a unifying principle would be superior to that which it unifies; whereas E. makes the elements themselves prior to all else.

Beare, p. 253, puts still more emphasis on this question. Taking it for granted that a philosopher should discuss unity, he insists that even one who limits his investigations to psychology is under obligation to clarify this problem.

The easier question involved is that of 416 a 6. "What is it that holds together the fire and the earth (of plants) tending, as they do, in opposite directions?" The only promising answer is Love. Love and Hate, so long as neither is in total possession of the world, alone can serve this purpose. Diels, fragment 20, may

be quoted in support of this. I shall again use the translation of Dr. Leonard whose poetry so well conserves for English-speaking people both the literary assets of E.'s style and its philosophic deficiencies:

> "The world-wide warfare of the eternal Two
> Well in the mass of human limbs is shown:
> Whiles into one they do through Love unite,
> And mortal members take the body's form,
> And life doth flower at the prime; and whiles,
> Again dissevered by the Hates perverse,
> They wander far and wide and up and down
> The surf-swept beaches and drear shores of life.
> So too with thicket, tree, and gleaming fish
> Housed in the crystal walls of waters wide;
> And so with beasts that couch on mountain slopes,
> And water-fowls that skim the long blue sea."

Among the more definite hints further bearing out this view are fragments 21, 22, 26 and 35. The conclusion to be drawn, however, is that E. did not write on this problem with a view to minor and scientific detail, as A. so frequently does. We said before, and this bears it out, that E. contented himself with a general world-view, with indicating how special problems might be solved, but without solving them. If the fragments mentioned above are sufficient to show that, had E. been asked, he would have designated Love as the unifying principle, we might at first be inclined to say that A. was at least a little hasty in making this criticism.

That this view of Love as the unifying principle would require us to identify Love and soul is by no means an insuperable objection, at least from A.'s point of view. True, Beare, p. 253, objects: "for to reason from his metaphysical conceptions of Φιλία and Νεῖκος to psychological analogues of synthesis and analysis would be merely fanciful." It is true that E. gives no account of a sensus communis, above asserting that the blood about the heart is the center of thought; and no one wishes to minimize the difficulty of relating the love in each object with the Love in the universe, the individual soul with the world-soul.

But philosophers are adepts at finding methods of intellectual gymnastics for doing many astonishing things. Just how Love unifies, E. never said. But this at least seems certain, Love unifies, and, according to A., 416 a 8, that which unifies is the soul.

This is probably exactly what A. wanted us to say. If we answer his question here, we enforce his objection of 410 a ff. If Love is the soul, the super-soul, what becomes of all the element-souls, and the definition of soul as that which knows? If Love is not the super-soul but merely the unifier and an element-soul in so far as it knows its like, what becomes of the unity of the knowing principle in man?

If we refer back to the discussion in book one and compare it with what has just been said, we shall see that the difficulty is a very real one. And it lies either in A.'s being incapable of recognizing the actual identity of two apparently different things, or E.'s identifying and confusing two things which are actually very different. For E., Love, like glue, can make the elements stick together, and it is in this sense that it is the harmony required in book one. For Love is not a formula nor an incorporeal force. The expressions denoting its corporeality are not merely poetic. It is true that E. speaks of the four roots of things and thus indicates that Love and Hate are something different. They are different, they cause a special kind of motion, they glue things together and tear them apart again, and this is what none of the four elements can do. Nevertheless, Love is corporeal. E. has not yet achieved the conception of spirit. But, and here is the main point, in addition to being corporeal glue, Love is also mental glue, a sensus communis manifested best of all in the blood. Love is the unifier of mental life.

A. could never accept and seemingly never appreciate this identification or confusion. Having once for all separated the element from a something which knows, his criticisms are not only keen but just. And as we try more profoundly to understand E.'s position, A.'s criticisms appear more and more just on account of E.'s very important omissions.

De An. 418 b 18–26 contains another of A.'s scientific mistakes; for him, light was a qualitative change in transparent material;

for E. it was the emanation of particles from the sun, or other luminous body. Sight consisted in the eyes' receiving emanations from the body seen. Plato, *Meno* 76 c, gives the theory briefly. It is interesting to note at this point the widely different estimates placed on Plato with reference to his historical ability. Dr. Veazie says, p. 3, "Plato alone took this position seriously and with some appreciation" (the problem of sight, the theory of emanations and the structure of the eye) "and it is from his controversy that most is to be learned." On the other hand, Beare, pp. 42, 43, writes, "For empirical psychology Plato had only the regard of a stepmother. He was averse to physical studies . . . Accordingly we find comparatively little in Plato's dialogues bearing on this subject" (vision), "and that little not always up to the standard of what was to be expected from a writer of his transcendent genius." A discussion of E.'s theory of vision, which is not necessary here, is excellently worked out by Beare, pp. 14–23, in spite of his estimate of Plato.

Aside then from other passages in A., and aside from the general theory of vision which is quite consistent with the passage we are studying, I have found no statement either to corroborate or to disprove the statement that light travels at a given speed. What little evidence there is, then, is in favor of A.'s being correct.

427 a 21 ff

We here come to a short enough mention of E. but one which leads us into something comparable to Plato's "ocean of arguments." For here especially is a section in which A. has risen above the limitations of contemporary science and attacks eternal problems. Here is a section which no philosopher, no matter how perfect physiological psychology become, dare ignore. The subject matter is the same yesterday, today and forever.

The question concerns the relation between intelligence and perception, *τὸ φρονεῖν καὶ τὸ αἰσθάνεσθαι*, which, A. states, were identified by E. We have already hinted in a previous discussion the extent and interest of a history of this attempt. Professor Singer of this university in his seminar takes great pains systematically to pass from life to sensation, and from sen-

sation to mind, distinguishing each from the other, yet using the lower term in the definition of the higher. Thus we see the history of the problem extends from E. to A., from A. to Aquinas, to Spinoza and Leibniz, Kant and Hegel, and to the present moment. In the course of this development, the terms sensation, perception, intelligence, thought mind and consciousness, have meant various things. It is reasonable to suppose, however, that *φρονεῖν* and especially *αἰσθάνεσθαι*, meant for E. something fairly similar to what it means today, not for a philosopher, but for the ordinary unphilosophical business man. Dr. Veazie in his second chapter, a study of the use of the former word in the fragments, considers that it means "something far more elemental and general than our word 'thought'." This may be a trifle too vague. I should prefer to call it just slightly more elemental than the idea of the general public. Now, E. did make some distinction between intelligence and perception, but not such a great deal. Several writers emphasize fragment 17, line 21, which may freely be translated, "Use your head, don't sit there with eyes like saucers."[1]

A., however, says E. identifies the two and quotes what are fragments 106[2] and 108[3] as evidence. There is practically no way of checking up on these two quotations by independent sources. But we have shown that A. is very exact in quoting and he quoted these two a second time in *Meta.* 1009 b 2–20. This passage in the *Meta.* more pointedly gives his criticism. The only problem then, is to see if A. understood these quotations correctly.

W. D. Ross, *Aristotle's Metaphysics*, in his note on 1009 b 11–33, says: "Bonitz argues that A. attaches too much importance to isolated phrases of the early thinkers. Certainly neither E. nor Democritus nor Parmenides nor Anaxagoras can fairly be charged with consistent sensationalism. E.'s denial of the reality of generation and destruction; . . . are sufficient evidence of a rationalistic strain in them; . . . They did not deliberately identify thought with sensation, but in their time the two things

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1 *τὴν σὺ νόωι δέρκευ, μηδ' ὄμμασιν ἧσο τεθηπώς.*
2 *πρὸς παρεὸν γὰρ μῆτις ἀέξεται ἀνθρώποισιν.*
3 *ὅθεν σφίσιν αἰεὶ καὶ τὸ φρονεῖν ἀλλοῖα παρίσταται.*

had not been clearly distinguished, so that it was impossible for them to be definitely either rationalists or sensationalists."

Zeller, in the edition previously mentioned, p. 804, argues: "Wenn jedoch A. hieraus schliesst, er habe die Wahrheit in der Sinneserscheinung suchen müssen (1009 b 12), so ist diess eine Folgerung, die unser Philosoph selbst ohne Zweifel abgelehnt hätte. Denn wenn er auch das Denken dem sinnlichen Erkennen nicht so schroff und grundsätzlich entgegenstellt, wie Parmenides, verlangt er doch immerhin, dass man sich bei Fragen, welche über den Bereich des Wahrnembaren hinausgehen, nicht auf die Sinne verlasse, sondern auf den Verstand." And he quotes the line from fragment 17.

The note of Hicks on this passage is not so outspoken in differing from A., though obviously Hicks thinks that A. said more than he had a right to say. I think his explanation of παρεόν, based on the Greek commentators, is very well taken. But it does not change the force of A.'s argument in the least, since a different object's being present, and a different bodily state's being present are, in this case, one and the same thing.

On the other side, we have, first of all, Theophrastus, who might be expected to agree with A. Yet I think it wrong to assume that he was prejudiced. Either his testimony is worth something, or, he copied from A. without ever knowing the sources. It is hard to suppose that this latter is the case, and still harder to suppose that had he found a mistake in A. he would have concealed it. At any rate, in *De Sens.* 10, we read: "He talks in a similar way about knowledge and ignorance. Knowledge exists by means of similars, ignorance by dissimilars, since knowledge is either the same as or very similar to sensation. . . . Therefore, we know chiefly by means of the blood, for here the elements are better mixed than in other parts of our bodies." And quotes fragment 107.

Beare, p. 253, also takes this view, for he says: "he did not really distinguish sense from reason or intelligence."

A more explicit statement, harmonizing with the last two views expressed, is made by Miss Millard, pp. 80, 81. "We perceive objects by the like element in us, we think with the blood, and the blood is but an effective mingling of the elements. There is

clearly no suggestion here of differentiation of the two faculties. They are on precisely the same basis. Yet they are not identified in a fully conscious way, limiting our knowledge to that gained through sense perception. The problem of their relation simply is not raised. . . . E. is just on the verge of becoming fully aware of the psychological distinction between the two." But in the note at the foot of the page, she says, strangely enough, that A. in both *De An.* 427 a 26 and *Meta.* 1009 b 12 is clearly misleading. Just whom these statements mislead is not so obvious.

It seems to me that A. is doing precisely what an accurate and self-respecting critic must do. He goes on to say, "all of them conceive thought to be corporeal like sensation and hold that we understand, as well as perceive, like by like, as explained at the outset of the discussion." Certainly this is consistent with all we know about E. E. did not go on to draw the consequences of this theory. A. does. It leaves no room for an explanation of error. And so he further distinguishes thinking from sensation with respect to truth and error, animals and men, and then passes on to imagination.

The final mention of E. in the *De An.* is at 430 a 28. It is used merely as a line of poetry intended to illustrate A.'s own position and forms the basis of no criticism or argument. It seems to be totally irrelevant.

So E. is "aufgehoben" as Hegel would say, or, to use a language different in several particulars from that of Hegel, "the old order changeth, yielding place to the new."

ANAXAGORAS

When we come to An. we find the situation greatly altered in several respects. In the first place there are only twenty-two fragments as against E.'s one hundred and eleven, not including the purifications which would raise his total to more than one hundred and fifty. Of the twenty-two quotations from An. the first nine and the eleventh to the seventeenth come from Simplicius. Thus the type of information, both in respect to extent and source, is far more limited than was the case with E.

Although Theophrastus, *De Sens.* 27, says An. treated of each sense, in the material we have the psychological terminology is conspicuous mostly by its absence. "Soul" occurs but twice, Fr. 4 and 12. Not in the fragments themselves but in the immediate contexts, "intellectual" occurs once, "sensible" once, "sensation" once, and "sight" once, Fr. 14 and 20. Though of the special senses we have information in Theophrastus, "mind" which forms such a large part of every discussion on An. occurs in the context but three times and in the quotations twelve times, seven of which are in Fr. 12. The others are found in 7, 11, 13 and 14.

One might now well suppose, before studying any further, that we can know far less about An. than about E. Yet the work of men like Breier, Heinze and Arleth, meagre as their results may be, precarious as their reasoning sometimes is, prevents us from falling into the lazy state of skepticism.

The quotation which is most important, for two reasons, very fortunately, viz. its length and its content, is Fr. 12. Since by reason of its content it will be necessary often to refer to it, it seems wise and convenient right at the outset to quote it in full:

"Other things have a part of everything else, but mind is unlimited, independent and is mixed with nothing, but is alone all by itself. For if it were not by itself, but were mixed with anything else, it would partake of altogether everything, if it were mixed with one; for in each thing a part of everything is present, just as I said previously; and the things mixed with it would hinder it from ruling as it does while alone by itself. For it is the finest and purest of

all things, and knows everything perfectly, and is most powerful. And whatever has soul to a greater or less degree, mind rules them all. Mind also rules the revolution of the universe, consequently it started the revolution. And first it started a very little to revolve, and it is causing more to revolve, and will affect still more. And mind knows both all that is mixed and that which is separated and differentiated. Moreover, mind orders everything which is to be, everything which was, whatever does not now exist, and everything that is. (It also rules) this revolution by which the stars and sun and moon, the air and ether, all of which are separate, revolve. It separates the thick from the thin, the warm from the cold, the light from the dark and the moist from the dry. But there are many parts of all things. For strictly speaking there is nothing separated or differentiated from anything else, except mind. But all mind, whether great or small, is similar. Nothing else however is similar to anything, but whatever it has the most of, these most evident constituents are and were the unitary object."

The first mention of An. in *De An.* is at 404 a 25. This is near the beginning of the treatise and A. has just said that the two characteristics of soul, viz. motion and sensation, serve in general to classify the predecessors. Democritus and the Pythagoreans are clearly in the first class. In the other section of this study, we have seen that E. was an excellent example of the second class. But where does An. belong? A. is puzzled. Evidently, even with the full information antiquity could give and only a century after An. wrote, there were some questions which could not be answered. He seemed to make the soul the moving principle, but this proposition is based on the supposition that the mind of An.'s philosophy and the soul A. is discussing are to be identified. Now there were passages which A. had before him, and there are passages which we have, that seem to make this identification. For example, in Plato, *Cratylus* 400 a, mind and soul are made identical. But the subject-matter of the passage, the etymology of the word soul, will permit us to consider this only an approximate identification if other evidence points to a divergent conclusion.

There has been considerable written to clear up this difficulty, but, as it seems to me, with little success. Fr. Breier, *Die Philosophie des Anaxagoras nach Aristotles*, p. 56, points out that A. could not settle this point nor could his successors. Yet on pp.

73, 74, he argues for an identification. Max Heinze, *Uber den Nous des Anaxagoras* pp. 41 ff., notes the inconclusive nature of the evidence and rather pointedly adds that there are a good many questions left unanswered by Plato and A. in their own systems.

But these men always assume that A. is generally trustworthy: the very point we are trying to determine. Beare also, p. 208, makes the same assumption and interprets A. as identifying mind and soul, explaining, p. 256, note 2, that this was probably an easy way to descend from teleology to the mechanism which caused Socrates to complain against him. Though this explanation is quite without basis, Beare may not be altogether mistaken in so categorically understanding A. For as Hicks in his notes says, the next mention of An., 405 a 13, practically grants the identification. Yet there is always the note of uncertainty. And A. seems plainly to put the uncertainty into the very words of An., Αν. δ'ἔοικε μὲν ἕτερον λέγειν ψυχήν τε καὶ νοῦν.

Neither does the conjecture of M. Léon Robin, *La Pensée Grecque* p. 152, that souls are emanations from mind have evidence for it in the sources, but it testifies to the need, as does Beare's suggestion as well, of some link between mind and soul. Otherwise An. makes too little sense. But A. said all this long ago; the judgments of the scholars then confirm A.; and the present passage, 405 a 15, 16, seems to infer that soul must be understood as in some way an individualized form of mind, and the phrase in Fr. 12, "but all mind, whether great or small, is similar," may be taken to indicate some particular manifestations of mind.

The evidence by which we can test the accuracy of A.'s account is very limited indeed and any definite conclusion must frankly in part be subjective. We cannot infer that because A. knew and recorded the teachings of E. with what accuracy we have shown, he did the same for An. Historical accuracy in one place, however, gives rise to some probability for care in another place. Second, the ambiguity and indecisiveness of the fragments correspond to the account A. gives. And finally, the acknowledgment of difficulty in interpreting An., when made by a person who surely ought to have had enough acumen to under-

stand anything clear, is a mark of carefulness. It might be proper to mention here that any strain of subjectivity discoverable in this paper to the favor of A. as an historian, is not based on an exalted admiration of A. as a philosopher. While one wishes to be fair and acknowledge his proper position as one of the world's greatest thinkers, it is very difficult to overlook the inconclusiveness, and consequent lacunae in his system, of many of his arguments. The νοῦς of An. is not the only νοῦς in history which has been difficult to understand.

The lines under consideration go on to say that he "really treats both as a single nature, except that it is preëminently mind which he takes as his first principle." This seems to me to be, if not the solution to, at least the source of, most of the difficulty. A. is interested in soul, i.e. the life principle in plants, animals and men. He is an empirical psychologist willing to make his observations mean something by raising them into a theory. But An. was interested in another problem. He was the first clearly to see, though how unsatisfactorily to apply Plato's *Phaedo* tells us, the need for a universal teleology. He had also made some psychological observations and wrote out some of his ideas. And apparently he connected in some way unknown to us and hardly intelligible to A. the principle of his universal intelligence with human psychology. Heinze, in the last half of his dissertation, puts very well the universal aspect of An.'s theory. It is the beginning of Greek theism. And with the proper restrictions which Heinze notes, he makes out a very good case. Now obviously to argue from a man's theism to what his psychology ought to be is rather precarious. But I do not doubt that the reason A. did it was that An. himself had indicated that it ought to be done.

"He says at any rate that mind alone of all things that exist is simple, unmixed and pure." Here we are on as sure ground as we can be. Whether An. himself used the words here mentioned, ἁπλοῦν, ἀμιγῆ, καθαρόν, or whether they are merely A.'s expressions to explain An.'s doctrine, does not interest us here. Arleth, pp. 72 and 81, has sufficiently discussed it. There seems to me no good reason for denying that An. used these words, especially when the thought expressed by them is the most

certain knowledge we have of An. There is uniform testimony that An., as A. says, made the first principle simple, unmixed and pure. Aside from the fragments where these statements occur, 11, 12, 13, 14 and their contexts, there are several hints in Aetius I, 7, 5; Cicero, *De Nat. Deorum* I, 11, 26; and Plato, *Cratylus* 413 c. The word γοῦν in the text of A. also indicates that he knew he was now on certain ground,—a further indication of care. It appears, therefore, even in the little so far covered that A. is as trustworthy as any historian can be expected to be.

The same evidence corroborates the last point of this passage: "he refers both knowledge and motion to the same principle when he says that mind sets the universe in motion." The participial clause may be explained on the supposition that naturally anyone would regard mind as the principle of knowledge and when it is also made the principle of motion, there is posited but one principle for both. This explanation seems to be sufficient to make the clause a reason for the preceding statement.

The next reference to An., 405 b 19–23, contains three positive statements. First, An. alone says mind is impassible; second, mind is unmixed; and third (after criticizing him because knowledge and impassibility conflict), An. never attempted to answer this objection.

The second statement above is found also in Plato's *Cratylus* 413 c., and is further explained at length in Fr. 12. There cannot be the least doubt of A.'s accuracy here. The third is such as to admit of no conclusive investigation. It would be necessary to have An.'s complete works. Some weak criticism might be directed against the basis of A.'s objection. The knowledge of an infinite mind, which is not the result of a learning process peculiar to finite minds, may be made compatible with impassibility. Yet the more we insist that God is unchangeable, the less we understand how he recognizes temporal events as having happened or as about to happen. Certainly in the sphere of learning beings, which is A.'s topic though not that of An., impassibility and knowledge conflict. Yet did An. make the statement that mind is impassible? Not only here but in a later passage which we shall note at the proper time, A. says he did. Hicks regards it however as A.'s inference. If this is so, A.

is manufacturing straw men to knock over. And that is not the most excellent procedure in philosophy. Hicks also notes that A. is firmly convinced that this is An.'s position, since he repeats the statement in *Phys.* 256 b 24, where ἀπαθής is apparently An.'s own word. But unfortunately outside of A. I have been able to find no other reference to the mind's impassibility. Whether we agree with Hicks or whether we consider A. correct depends, then, not so much on the evidence bearing on this individual passage but rather on our general attitude toward A. If A. could have been thrice mistaken and could have manufactured false difficulties we may be led to reject this sentence. But such a conclusion based on such flimsy evidence hardly seems reasonable. Yet if on the unsupported testimony of A. we accept the impassibility of mind as the assertion of An., while we defend A. we attack An., for A. shows clearly the absurdities attendant on this view.

This discussion gets its full share of emphasis in the last two passages where An. is mentioned, 429 a 19 and 429 b 24. Before entering on these sections, let it be noted that a careless reading of the *De An.* might lead one to suppose the mention of An. to be little more than a literary embellishment. A. finds himself using some familiar phrase and by a clever perversion or play on words reproduces An. with a peculiar twist. In the *Eth. Nic.* A. very obviously aims at occasional literary effect. But *De An.* is more similar to the technical, dry-as-dust *Meta.* It is a serious work and an historical reference can have only the purpose of making a point clear to the student who knows the historical situation. Each phrase, historical or dogmatic, must be estimated at its full worth.

The paragraph in which the first of these two references occurs considers the distinctive character of that part of the soul by which thinking is done, and how thinking comes about. Though dissimilar in other respects, thinking, in being a reception of forms, is similar to perception. Reception is a sort of being acted upon, but aside from the mere reception of forms, the mind must remain unaffected by them (cf. Hicks p. 476). "The mind, then, since it thinks all things, must needs, in the words of An., be unmixed with any, if it is to rule, that is, to know. For by in-

truding its own form it hinders and obstructs that which is alien to it." One is interested in seeing that A. said, since knowledge must be pure the mind has no a priori forms, while Kant replies, since the mind cannot think without forms, knowledge is not pure.

Unfortunately as was before indicated, An. is speaking primarily of the divine mind, laying the foundations of theism as Heinze would have him do; whereas A. is speaking solely of the human mind. When An. says mind is unmixed, he is separating mind from material things; if he did more we do not have the fragments. A.'s purpose, however, is to separate the human mind from concepts, and identifies "to rule" and "to know". Some have considered this identification unwarranted, though with perhaps insufficient evidence. The fragment quoted at the beginning states that the mind rules the universe and knows all things. And Socrates' criticism of An.'s imperfect teleology indicates that An. had at first given promise to show that mind rules by doing what is best, which certainly requires knowledge. And it would seem especially appropriate to identify ruling and knowing in the case under consideration. How mind could rule thoughts without knowing them is difficult to imagine.

A few lines further on A. raises the final objection against An. not so much with the intention of ridiculing An. but rather as the most advantageous manner of explaining his own opinions. A. himself regards the mind as impassible in a certain sense. The difference between this sense and the absolute sense of An. will furnish the answer to the problem, "assuming that the mind is something simple and impassive and, in the words of An., has nothing in common with anything else, how will it think . . .?" The idea here attributed to An. is completely harmonious with what we know of him. And A.'s criticism is directed against his own loose previous statement as much as against An.

Our conclusion, then, must either ascribe philosophical impossibilities to An. or historical impossibilities to A. The particular philosophical impossibility is to assert that mind is both impassible and capable of knowing. However philosophically impossible this may be, it is not psychologically impossible. One might easily call the mind impassible without noting the

inconsistency with knowing. We have an excellent illustration of a similar slip in the *Phaedo*. There the ideas are immutable. But in the *Sophist* the fault is detected and motion introduced. Thus it is quite likely that An. was philosophically impossible. As to whether A. made historical blunders or not, we have reviewed the evidence.

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